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Containers.

The invention is concerned with containers of the kind intended to contain and protect paper or sheet material in a wallet or folder. The container (2) includes a front cover panel (4), a rear cover panel (6) and a spine panel (8) for the folder and includes side panels (12,14,16) which are hingeably attached to edge portions of the cover panels (4,6) so as to be capable of being folded to form the container. Box corners are formed between adjacent ends of side panels (12,14;14,16) by interlocking strip fastener means (18,20) moulded from plastics material. In one example mentioned, the fastener means (18,20) are moulded integrally with a side panel (12), which is then hingeably connected to a cover panel (4). In a further example, an outer cover panel (44) is provided, the arrangement being such that the panels of the container may be alternatively arranged to provide an easel-like support.

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The invention is concerned with improvements in or relating to containers at least partially formed of plastics material, particularly but not exclusively, for use for example as wallets, files, folders or other protective coverings for paper, computer-related matter or other sheet material or sheet-like articles.

Container for the above matter may be selected from a variety of designs, but principally may comprise a front cover and a back cover of a relatively robust material, the two covers being joined together at a spine panel. Clip means or so-called ring binder devices may be used to secure in place a number of suitably perforated sheets of paper or the like. However, such an arrangement does not afford adequate protection for the contents in certain circumstances and it is conventional practice to provide a separate rigid sleeve or part-box in which the container is received, in a manner such that the spine panel is visible for each of reference.

The use of a separate sleeve is inconvenient in that such sleeves may become mislaid or inadvertently exchanged. Moreover, the arrangement involves the use of a considerable quantity of container-forming material, which may, for reasons of presentation or prestige, need to be expensive to produce.

It is an object of the invention to provide a container the production and use of which will minimise the above disadvantages.

The invention provides a container for use in holding sheet material comprising a plurality of cover panels including at least a front cover panel and a rear cover panel and a plurality of side panels including one spine panel, each of said panels being hingeably secured to at least an adjacent one of said panels so as to be foldable from an initially flat condition into a box-forming condition, where at least two of said side panels are secured at adjacent edge portions on one of said plurality of cover panels and are joinable to each other at end portions thereof, to form a box corner region, by means of a plastics interlocking strip fastener means.

In one example of a container according to the invention, each of side panels may be hingedly secured to edge portions of the front or rear cover panel.

In another example, one of said side portions may be secured to an edge portion of a front or rear cover panel, a further, outer, cover panel being also hingedly secured to said side portion at an opposite edge thereof, said outer cover panel having hingedly connected thereto two others of said side panels, joinable to each other by means of said interlocking strip fastener to form a box corner region.

The invention further provides a method of constructing a container for use in holding sheet material and comprising a plurality of cover panels and side panels wherein at least two of said side panels are hingedly secured at lengthwise extending edge por-

tions thereof to adjacent edge portions of a cover panel, said side panels being formed by an extrusion in which a sheet-like portion of plastics material is extruded from an elongate extrusion die outlet having a slot length equivalent to the length of said lengthwise extending edge portion of the cover panel, at least one of two extreme end portions of said extrusion die outlet being shaped to produce an extrusion strip having a cross-section providing an interlockable portion of a plastics strip fastener.

Conveniently both end portions of said outlet are shaped to produce an extrusion strip having a cross-section providing two interlockable portions of a plastics strip fastener, the outlet preferably being shaped at one end portion thereof to provide a male interlockable portion and at the other end portion to provide a female interlockable portion.

The strip extruded by the die outlet will then be cut transversely into portions the depth of which correspond to the desired depth of the container. The strips may then be welded by a heat-welding technique to secure them to edge portions of the cover panels in a hingeable manner.

There will now be described two examples of containers according to the invention using a method also according to the invention. It will be understood that the description which is to be read with reference to the drawings, is given by way of example only and not by way of limitation.

In the drawings:-

Figure 1 is a perspective view of a first example of a container;

Figure 2 is a fragmentary view of a portion of the container of Figure 1;

Figures 3 to 5 show extruded strips of plastics material showing interlockable portions of a plastics strip fastener;

Figure 6 shows the container of Figure 1 in an initial flat condition, to a reduced scale;

Figure 7 shows a perspective view of a second example of a container according to the invention;

Figure 8 shows the container of Figure 7 in a flat condition;

Figure 9 is a perspective view of the second container in a partially folded condition; and

Figure 10 shows the second container in a support position.

Figures 1 and 6 show a container 2 comprising a front cover panel 4, a rear cover panel 6 and a spine panel 8. A ring binder device 10 is provided for holding apertured sheets (not shown). The cover panel 4 is provided with three side panels 12, 14, 16 each hinged to a respective edge portion of the panel 4. The panels 12, 14, 16 are of plastics material and the panels 4, 6 and 8 are of card or the like and covered in plastics sheet material. End portions of the side panels are provided with interlockable portions 18, 20 compris-

ing a strip fastener means. Portion 18 has a C-shape cross-section comprising a female strip portion into which is received the portion 20 so as to be interengaged in a manner to provide a box-corner as indicated at 22 the side panels being hinged about lengthwise extending heat-welded seams at 24. The contents of the container may therefore be protected from damage while stored, but when required for use, the corners 22 may be released and the container laid flat as shown in Figure 6.

The side panels 12,14,16 are manufactured by a plastics extrusion process in which an extrusion die outlet is used which includes a nozzle having an elongated slit of a shape to produce an extrusion having a cross-section as shown in Figure 3, including the C-shaped portion 18 and a ridge comprising portion 20. A transverse cut is made to produce a length of plastics strip appropriate for a depth of panel to correspond to the dimension a of the spine panel 8. It will be observed that the panel 14 may be formed by taking a cut length of extruded strip identical to panel strip 12 and cutting it along line 26. Similarly a panel 16 may be formed by cutting along line 28.

Suitable fastening for the cover panel 6 against the outer edge of panel 12 may be provided if required.

Figures 7 and 8 show a second example of a container comprising two cover panels 30 and 32, a spine panel 34 and a ring binder device 36. The panels 30,32,34 have an outer skin of sheet plastics material and are interconnected at hinges 38, about which the various panels may be folded.

Hinged at an edge portion 40 of the panel 32 is an integrally formed side panel 42 which is hinged at its opposite edge to an outer cover panel 44. Two further side panels 46 and 48 are provided on free edge portions of the panel 44. Adjacent end portions of the two side panels 46 and 48 are respectively provided with male and female plastics strip fastening members 50 and 52, of the same cross-section as the portions 20 and 18 respectively of Figures 1 to 6. The members 50 and 52 are constructed as portions of extrusions, a length of extruded plastics material being cut to suit the depth of the container.

If desired, adjacent end portions of side panels 42 and 46 may also be provided with plastics strip fastening members similar to the members 50 and 52.

To fold the arrangement shown in Figure 8 into the configuration shown in Figure 7, the cover panel 30 is folded to overlie the panel 32 as in Figure 9 and the outer cover panel 44, with the portions 50 and 52 fastened, is folded to overlie the cover panel 30. The arrangement is then secured by an integrally formed strap 54 having a snap fastener 56. An alternative location for the strap is indicated in chain-dotted lines at 54'.

Figure 10 shows an alternative folded condition for the container of Figures 7 to 9, in which sheets of

paper 58, for example, of an instruction manual, are secured by the ring binder device 36 and a support arrangement is achieved by folding the outer cover panel 44 back to form an easel-like A-shaped configuration secured by the strap 54 or 54'.

Various modifications may be made within the scope of the invention as defined in the following claims.

Claims

1. A container for use in holding sheet material comprising a plurality of cover panels including at least a front cover panel (4;30) and a rear cover panel (6;32) and a plurality of side panels (8,12,14,16;34,42,46,48) including one spine panel (8;34), each of said panels being hingeably secured to at least an adjacent one of said panels so as to be foldable from an initially flat condition into a box-forming condition, where at least two of said side panels are secured at adjacent edge portions on one of said plurality of cover panels (4;44) and are joinable to each other at end portions thereof, to form a box corner region, by means of a plastics interlocking strip fastener means (18,20;50,52).
2. A container as claimed in claim 1, wherein each of said side panels is hingedly secured to edge portions of the front (4) and rear (6) cover panels.
3. A container as claimed in claim 1 wherein the plurality of cover panels comprises an outer cover panel (44), at least one of said side panels (42,46,48) being hingedly secured to edge portion(s) of said outer cover panel (44).
4. A container as claimed in claim 3, wherein said one (42) of the side panels is hingedly secured along one lengthwise edge thereof to one of said front (30) and rear (32) cover panels and along an opposite lengthwise edge to said outer cover panel (44).
5. A container as claimed in either one of claims 3 and 4, wherein two side panels (46,48) are secured to said outer cover panel at adjacent edge portions thereof.
6. A container as claimed in either one of claims 4 and 5 wherein an elongate strap means (54) is provided to maintain the cover panels and side panels in a first, closed, box-like condition to enclose contents thereof.
7. A container as claimed in claim 6, wherein an elongate strap means (54) is provided to maintain

the cover panels and side panels in a second, open, easel-like condition to support and display contents thereof.

8. A method of constructing a container for use in holding sheet material and comprising a plurality of cover panels (4,6;30,32) and side panels (8,12,14,16;34,42,46,48) wherein at least two of said side panels (12,14;46,48) are hingedly secured at lengthwise extending edge portions thereof to adjacent edge portions of a cover panel (4;44), said side panels being formed by an extrusion in which a sheet-like portion of plastics material is extruded from an elongate extrusion die outlet having a slot length equivalent to the length of said lengthwise extending edge portion of the cover panel, at least one of two extreme end portions of said extrusion die outlet being shaped to produce an extrusion strip having a cross-section providing an interlockable portion (18,20;50,52) of a plastics strip fastener.
9. A method as claimed in claim 8, wherein a first of said extreme end portions of the outlet is shaped to produce a male interlockable portion (20;50) on the extrusion strip and a second of said extreme end portions is shaped to provide a female interlockable (18;52) portion thereon.
10. A method as claimed in claim 9, wherein a portion of extrusion strip is cut from the length thereof, said portion having a depth equal to the desired width of the side panel (12) of the container, and thereafter securing the side panel so formed to other panels (4,14,16) of the container.

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